Gateway

8400 Server Rackmount Installation Guide

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Preface

Conventions used in this manual

Throughout this manual, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign means to press the keys at the same time.
Setup	Commands to be entered, options to select, and messages that appear on your monitor are printed in bold.
User's Guide	Names of publications are printed in italic.

Important

A note labeled important informs you of special circumstances.

Caution

A caution warns you of possible damage to equipment or loss of data.

Warning

A warning indicates the possibility of personal injury.

Information about your system

Accessing the server system manual

A comprehensive *8400 Server System Manual* is located on the Server Companion CD, which accompanied your system. To access this document (in PDF format), place the Server Companion CD into the CD drive on a system running a Windows-based operating system, then follow the instructions on the **Welcome** screen. To get the latest updates to your system documentation, visit the technical support area of www.gatewayatwork.com.

Getting additional information

Visit the technical support area of www.gatewayatwork.com to find information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver and program updates
- Technical tips
- Service agreement information
- Technical documents and component information
- Frequently asked questions (FAQs)
- Documentation for peripherals or optional components
- Online technical support

1 Installation

This guide provides information on converting your Gateway server to a rackmount configuration and installing your Gateway server in a cabinet. The Gateway rackmount conversion accessory kit includes:

- Gateway bezel assembly (installed on pre-configured systems)
- 2 front panel side brackets
- 2 pairs of Gateway mounting brackets (labeled **FRONT** and **REAR**)
- 2 pairs of generic mounting brackets (short and long)
- 2 28-inch (71.12 cm) cabinet slide rail assemblies
- 1 cable retractor assembly
- Assorted screws
- Miscellaneous hardware

Converting to rackmount

To convert the server to a standard 19-inch (48.26 cm) rack-mountable drawer, you need to remove the unneeded hardware and tower bezel, then install the new bezel and mounting hardware. If your system came configured for rack installation, go to "Installing the system drawer side rails" on page 8.

Removing the top panel

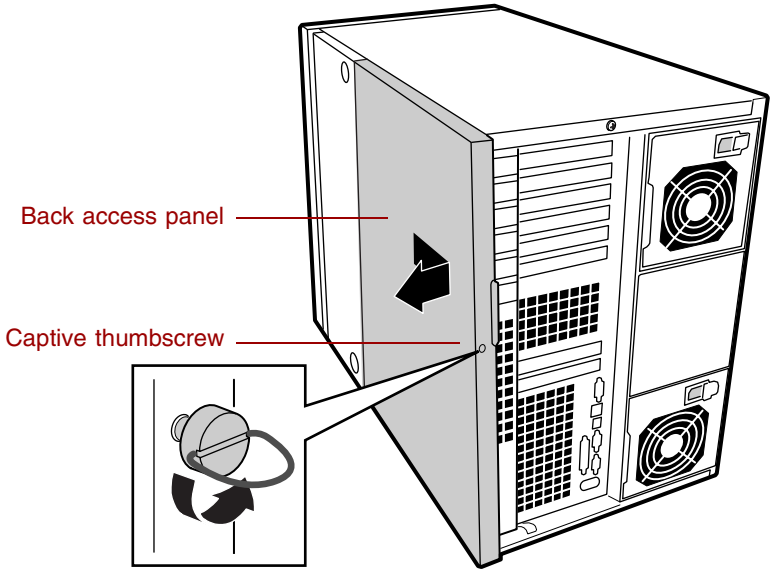
To remove the top panel:

1. Turn off system power, then disconnect the power cord and all the peripherals.
2. Make sure the server is on a stable surface, such as a table or counter.

Warning

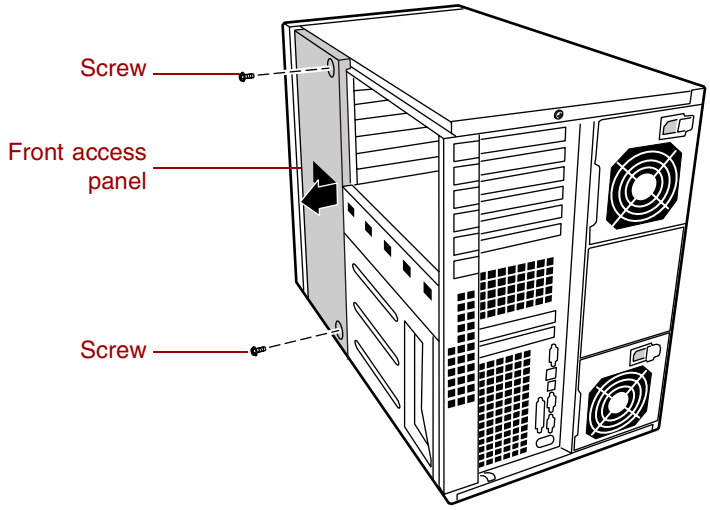
In order to avoid injury or dropping the server, Gateway recommends that two people lift the server.

3. Unscrew the captive thumbscrew on the back access panel.
4. Slide the back access panel toward the back, then pull outward to remove.



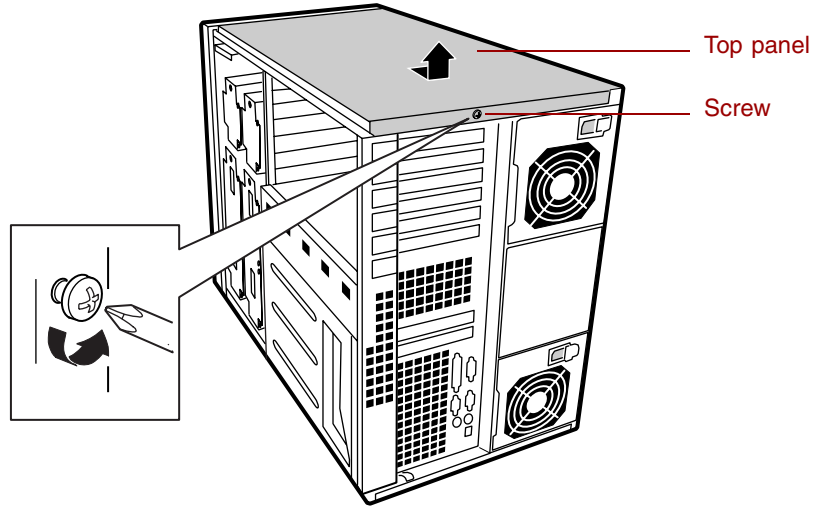
5 Remove the two screws securing the front access panel to the chassis.

6 Slide the front access panel to the back and pull outward to remove.



7 Remove the single screw securing the top to the chassis.

8 Slide the top panel to the back, then pull it off.

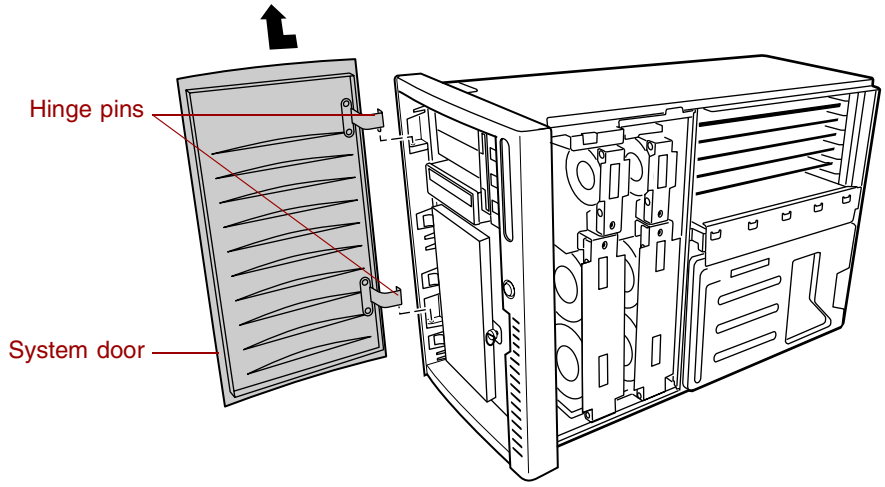


9 Replace the front and back side access panels.

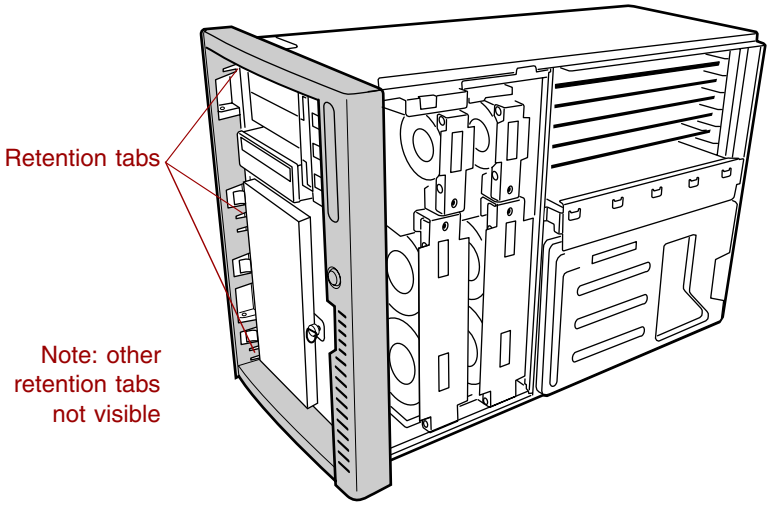
Changing the bezel

To remove the tower bezel:

1. With the tower in the upright position, open the system door and lift the door so that the hinge pins (2) come out of the hinge-pin sockets.
2. Pull the door away from the bezel and set it aside.



3 Beginning at the top left inside edge of the bezel, depress the plastic retention tabs toward the outside edge of the bezel, and pull the bezel out from the chassis slightly, enough to keep the tabs from snapping back into place.



4 Work your way around the bezel until all eight tabs (three left, one bottom, two right, and two top) have been released, then pull the bezel off the chassis.

To install the rack bezel:

1 Align the rack bezel with the chassis, just as the tower bezel was aligned prior to removal. Make sure the plastic retention tabs line up with the appropriate slots in the chassis.

2 Press the rack bezel onto the chassis until the retention tabs snap into place.

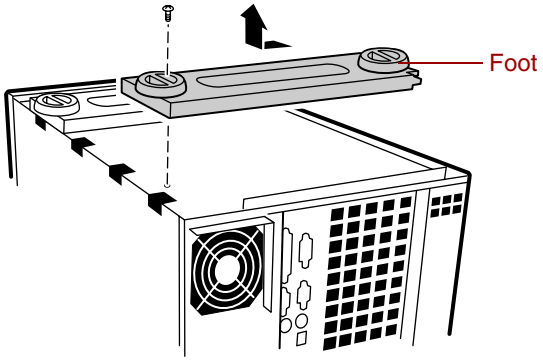
3 Align the door with the chassis, just as it was aligned prior to removal.

4 Insert the hinge pins (2) into the hinge-pin sockets, allowing the door to fall into place, then close the door.

Removing the feet

To remove the feet:

1. Turn the server upside down.
2. Using a flat-bladed screwdriver, remove the screws securing the feet to the bottom of the chassis.

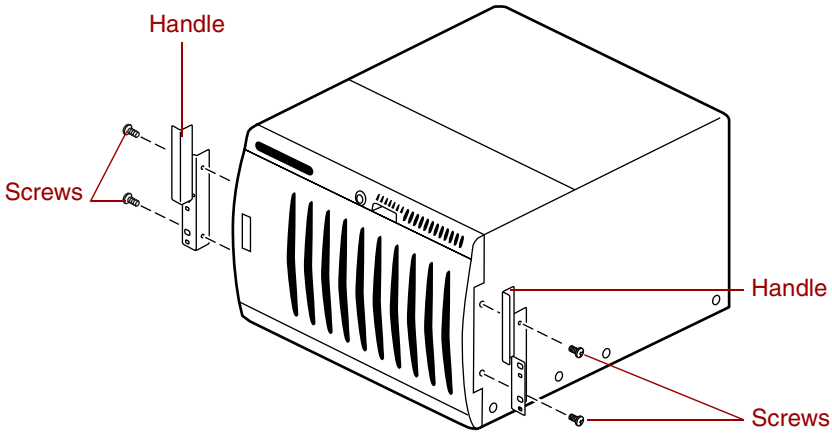


3. Slide each foot to the left, releasing it from the chassis, then remove.

Installing the chassis handles

To install the chassis handles:

1. Place the server on its side, like it will be installed in the rack.
2. Orient the handles so that the screw holes on the edge of the handle align with the screw holes in the chassis (there are rectangular cutouts in the sides of the bezel where the handles will be installed).
3. Using four screws from the kit (2 for each handle), attach the handles to the chassis.

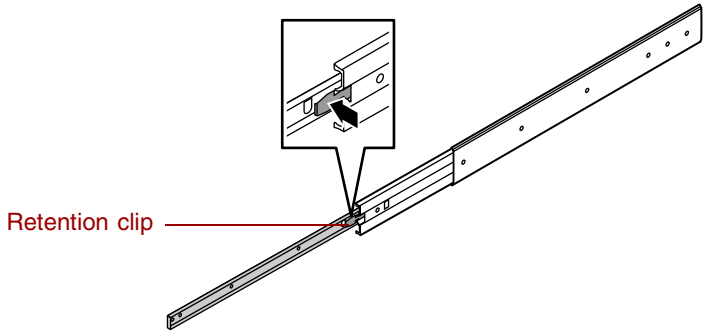


Installing the system drawer side rails

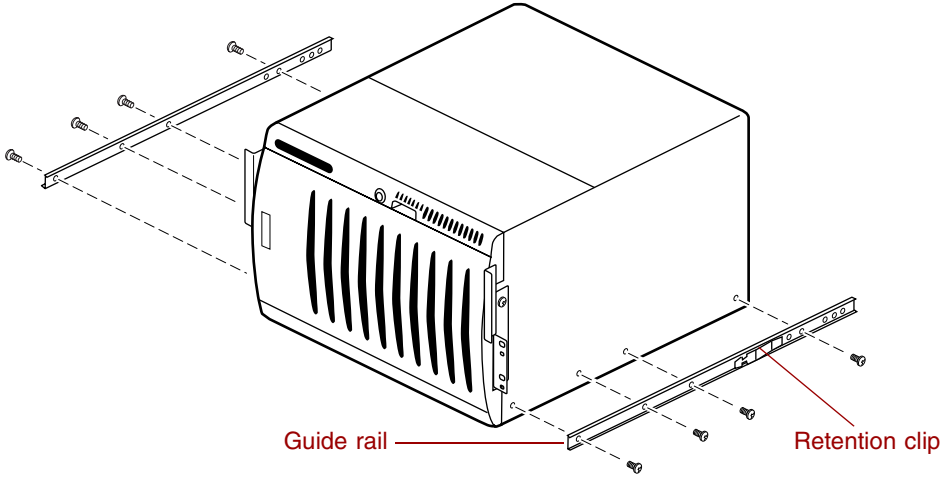
Before installing the server (system drawer) in the cabinet, you need to install the system drawer side rails on the server.

To install the system drawer side rails:

1. Remove the system drawer side rails from the cabinet mounting rails by depressing the retention clips on the inside of the system drawer side rails, then sliding the rails off.



2. Mount the system drawer side rail on the server using 4 screws from the accessory kit. Make sure the retention clips are at the back of the server.



3. Mount the second rail on the opposite side of the server.

Installing the cabinet mounting brackets and mounting rails

If you are installing the server in a Gateway cabinet, refer to the following section. If you are installing the server in a non-Gateway cabinet, go to “Installing generic mounting brackets” on page 13.

Installing Gateway mounting brackets

If Gateway mounting brackets are already installed in the cabinet, go to “Installing the cabinet mounting rails onto Gateway brackets” on page 11.

To install the Gateway mounting brackets in the cabinet:

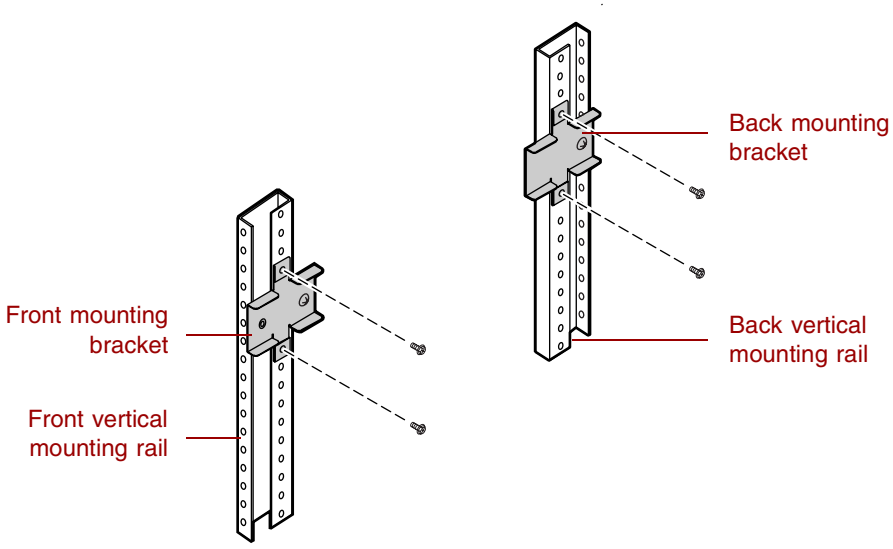
1. If you received a mounting template with your cabinet, use it to locate the exact position of the cabinet mounting brackets.

Caution

When considering the position of the system in the cabinet, make sure that a hazardous stability condition is not created because of uneven loading.

2. Position the front mounting bracket (labeled **FRONT**) on the front vertical mounting rail.

3 Attach the front mounting bracket to the front vertical mounting rail using two screws from the accessory kit.



4 Position the back mounting bracket (labeled **REAR**) on the back vertical mounting rail.

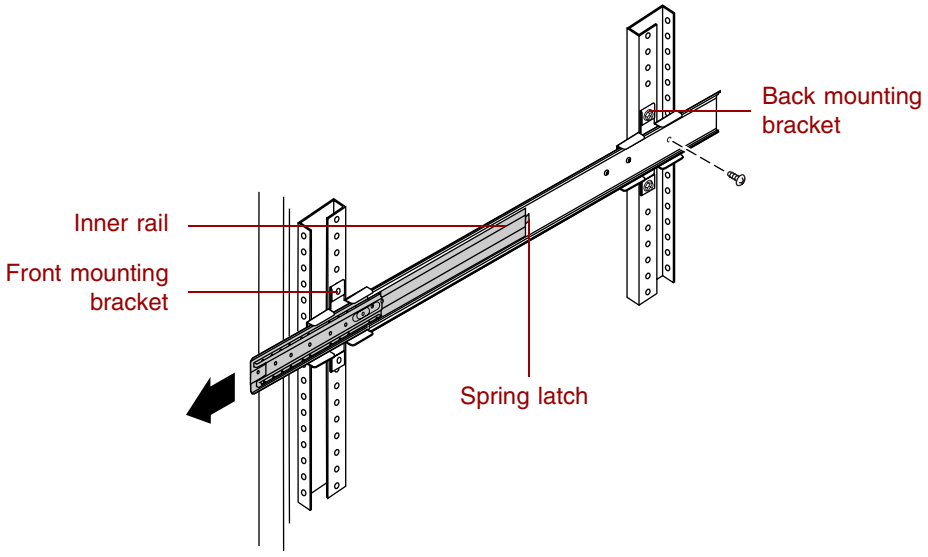
5 Attach the back mounting bracket to the back vertical mounting rail using two screws from the accessory kit.

6 Mount the second set of brackets on the opposite side of the cabinet by repeating Steps 2 through 5.

Installing the cabinet mounting rails onto Gateway brackets

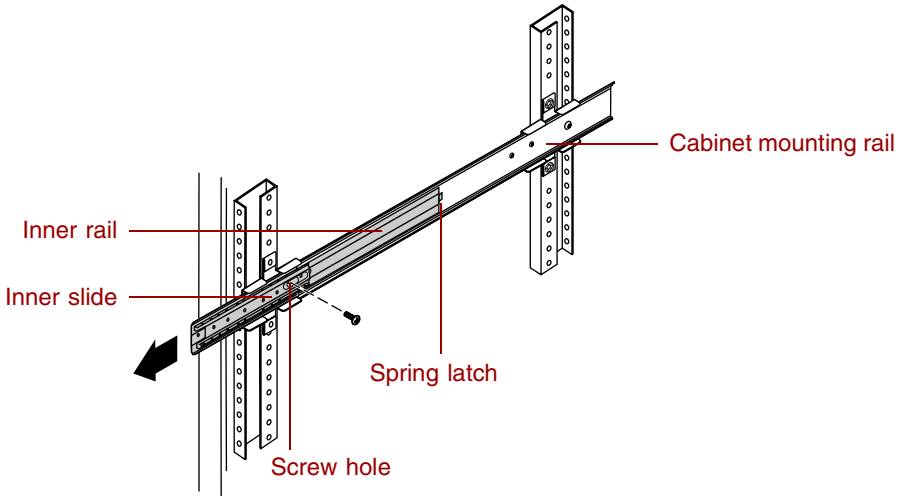
To install the cabinet mounting rails onto Gateway brackets:

1 Align the back end of the cabinet mounting rail to the back mounting bracket by sliding the inner rail forward (if the spring latch locks the inner rail into place, free the rail by releasing the spring latch).



2 Attach the back end of the cabinet mounting rail to the back mounting bracket using a screw from the accessory kit.

3 Align the front of the cabinet mounting rail to the front mounting bracket by sliding the inner rail and inner slide until the rail screw hole opening lines up with one of the front mounting bracket screw holes.



4 Attach the front of the cabinet mounting rail to the front mounting bracket using a screw from the accessory kit.

5 Attach the second screw to the front mounting bracket by repeating Steps 3 and 4.

6 Mount the second cabinet mounting rail on the opposite side of the cabinet by repeating Steps 1 through 5.

7 Go to “Mounting the system drawer in the cabinet” on page 16.

Installing generic mounting brackets

If you are installing the server in a non-Gateway cabinet, use the generic mounting brackets. These brackets allow for different cabinet depths. If generic mounting brackets are already installed in the cabinet, go to "Installing the cabinet mounting rails onto generic brackets" on page 14.

To install the generic mounting brackets in the cabinet:

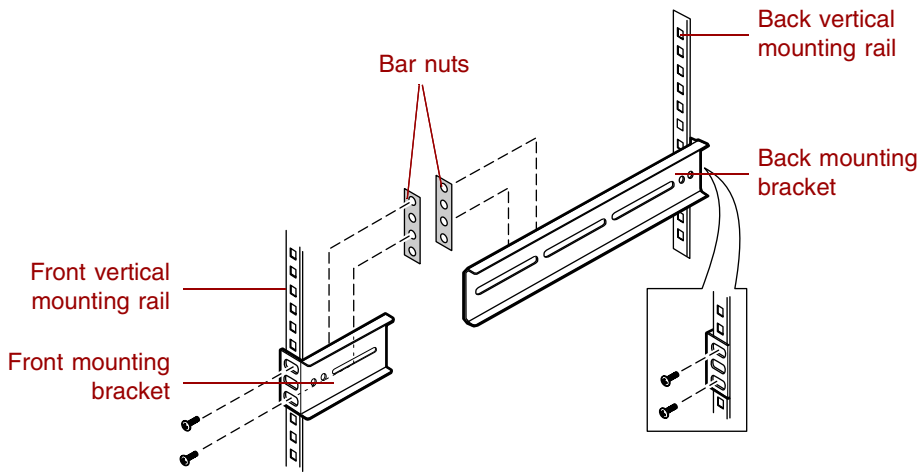
1. If you received a mounting template with your cabinet, use it to locate the exact position of the cabinet mounting brackets.

Caution

When considering the position of the system in the cabinet, make sure that a hazardous stability condition is not created because of uneven loading.

2. Position the front mounting bracket (shorter bracket) on the front vertical mounting rail.
3. Attach the front mounting bracket to the front vertical mounting rail using two screws from the accessory kit.

   If screw holes in the front vertical mounting rail are not threaded, attach the front mounting bracket by using the screws and bar nut from the accessory kit.



4 Position the back mounting bracket (longer bracket) on the back vertical mounting rail.

5 Attach the back mounting bracket to the back vertical mounting rail using two screws from the accessory kit.

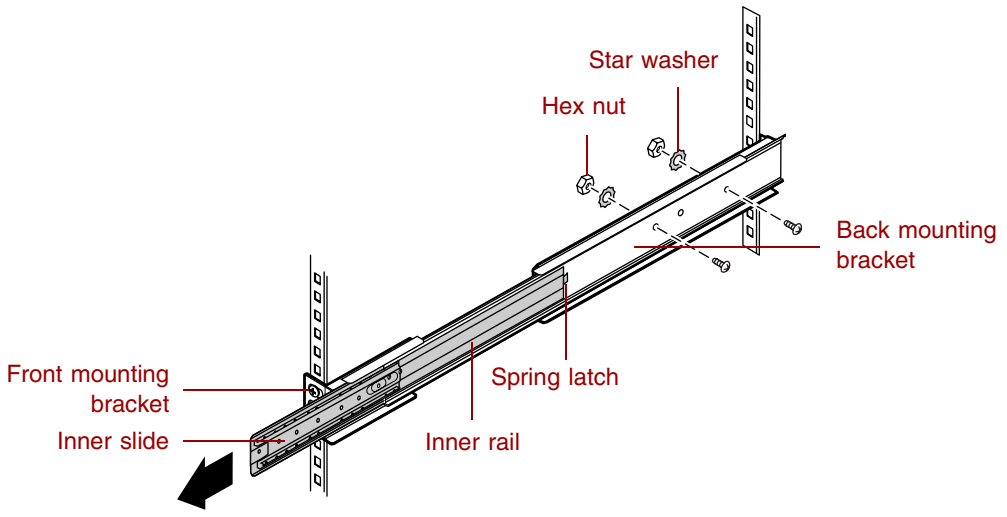
If screw holes in the back vertical mounting rail are not threaded, attach the back mounting bracket by using the screws and bar nut from the accessory kit.

6 Mount the second set of brackets on the opposite side of the cabinet by repeating Steps 2 through 5.

Installing the cabinet mounting rails onto generic brackets

To install the cabinet mounting rails onto generic brackets:

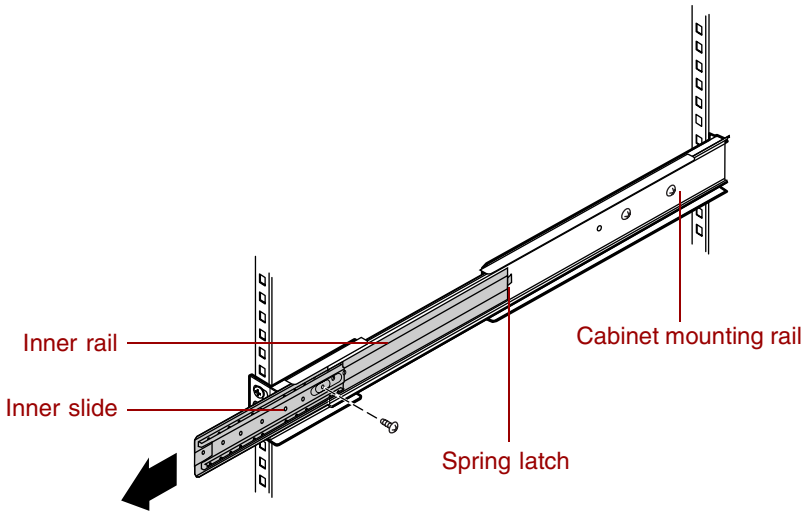
1 Align the back end of the cabinet mounting rail to the back mounting bracket by sliding the inner rail forward (if the spring latch locks the inner rail into place, free the rail by releasing the spring latch).



2 Attach the back end of the cabinet mounting rail to the back mounting bracket using two screws, hex nuts, and star washers from the accessory kit.

   One screw must be located in the last back bracket screw hole. The second screw can be located in any of the other back bracket long screw holes.

3 Align the front of the cabinet mounting rail to the front mounting bracket by sliding the inner rail and inner slide until the rail screw hole opening lines up with the first inner rail screw hole and with the second screw hole on the front mounting bracket.



4 Attach the front of the cabinet mounting rail to the front mounting bracket using a screw from the accessory kit.

5 Slide the inner rail and the inner slide again until the rail screw hole opening lines up with the front mounting bracket long screw hole.

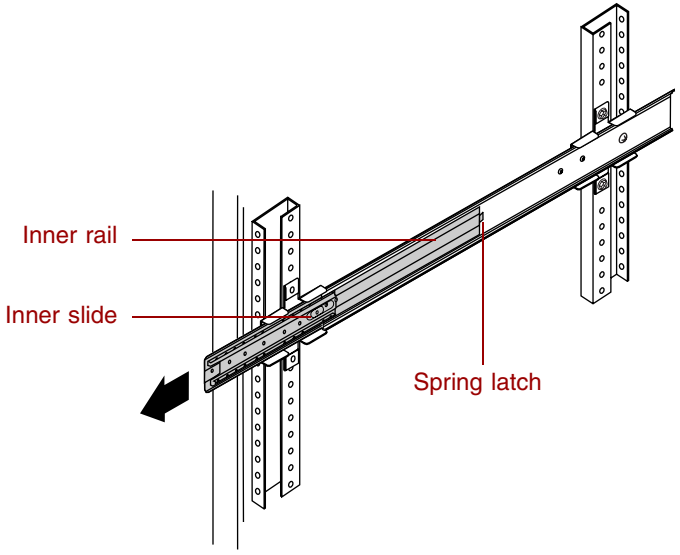
6 Attach the front of the cabinet mounting rail to the front mounting bracket using a screw from the accessory kit.

7 Mount the second cabinet mounting rail on the opposite side of the cabinet by repeating Steps 1 through 6.

Mounting the system drawer in the cabinet

To mount the system drawer in the cabinet:

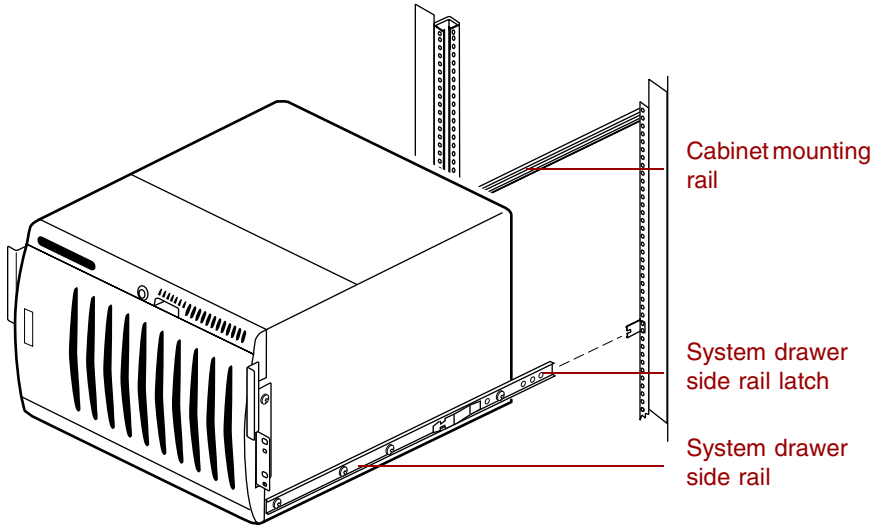
1. Pull both of the inner rails forward until the spring latches on each side lock.
2. Pull the inner slides all the way forward.



3 Lift the system drawer to the same height as the inner rails, then align the system drawer side rails with the inner slides.

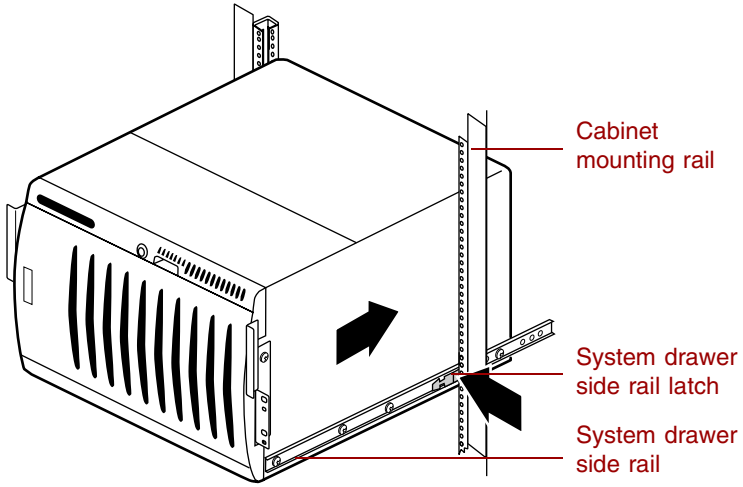
Warning

In order to avoid injury or dropping the server, Gateway recommends that two people lift the system drawer.



4 Push the system drawer evenly into the cabinet until the latches on the system drawer side rails lock.

5 Press the latches on both sides of the system drawer side rails, then push the system drawer back until the inner rail spring latches lock.



6 From the back side of the cabinet, release the spring latch on the inner rail while pushing the system drawer to the back of the cabinet.

The first time the system drawer is pushed back into the cabinet there may be some restriction of movement. The drawer should move smoothly, without binding or restriction thereafter. If there is still restriction of movement, make sure all rails and brackets are aligned properly.

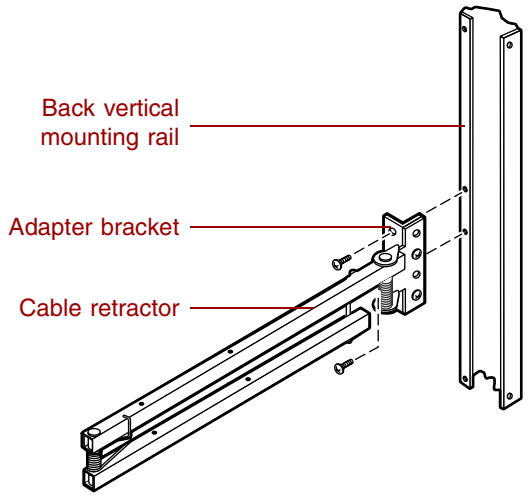
Installing the cable retractor

Cable retractors reduce strain on the drawer cables and connectors and simplify maintenance because they keep the cables out of the way. If you are installing a cable retractor in a Gateway cabinet, refer to the following section. If you are installing a cable retractor in a non-Gateway cabinet, go to "Installing a cable retractor in a non-Gateway cabinet" on page 20.

Installing a cable retractor in a Gateway cabinet

To install a cable retractor in a Gateway cabinet:

1. Position the cable retractor adapter bracket on the back vertical mounting rail, then align the mounting holes on both the adapter bracket and the back vertical mounting rail.
2. Attach the adapter bracket to the back vertical mounting rail using two screws from the accessory kit. The retractor may be mounted above or below the level of the system drawer.

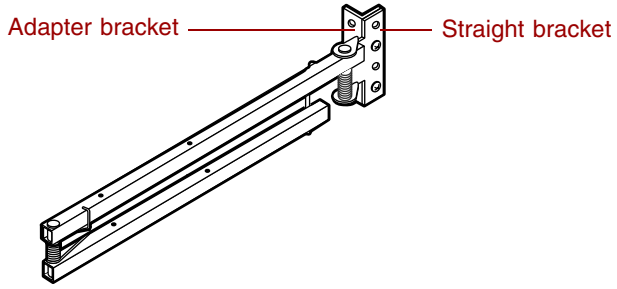


3. Go to "Attaching the cables to the retractor" on page 21.

Installing a cable retractor in a non-Gateway cabinet

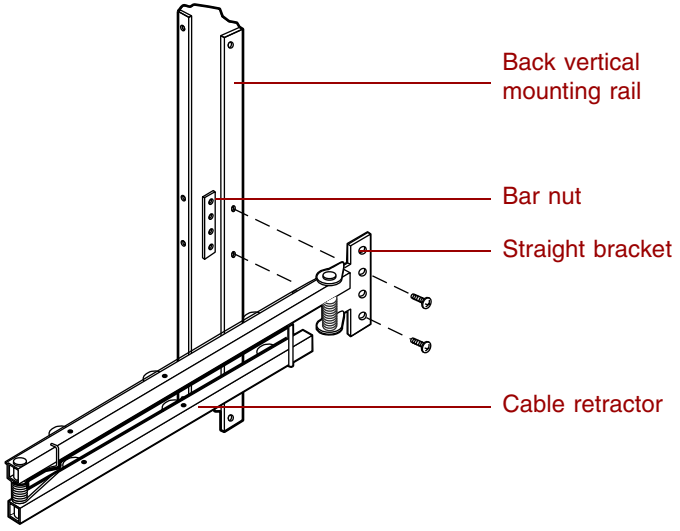
To install a cable retractor in a non-Gateway cabinet:

1 Remove the adapter bracket from the cable retractor straight bracket.



2 Position the cable retractor straight bracket on the back vertical mounting rail, then align the mounting holes on both the cable retractor bracket and the back vertical mounting rail.

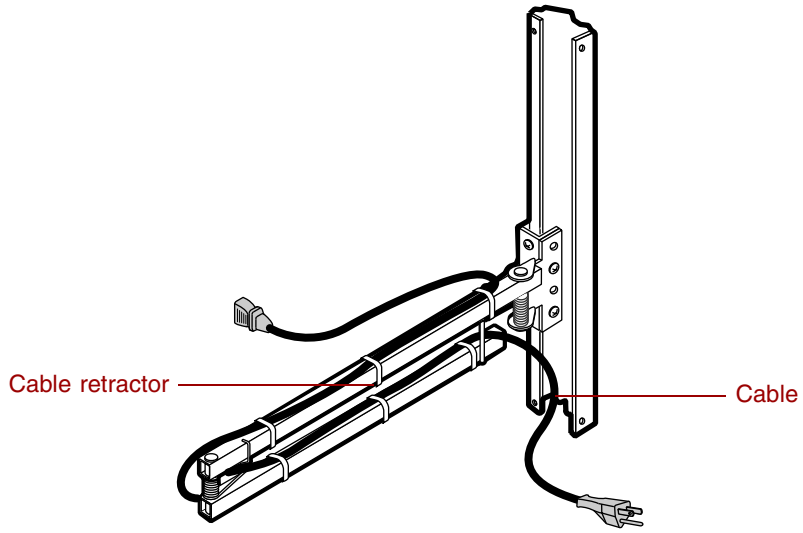
3 Attach the bracket to the back vertical mounting rail using a bar nut and screws from the accessory kit. The retractor may be mounted above or below the level of the system drawer.



Attaching the cables to the retractor

To attach the cables:

1. Route the cables from the back of the system drawer to the cable retractor.
2. Attach the cables to the cable retractor, making sure the cables have sufficient slack when the system drawer is pulled forward and pushed back into place.



3. Route the cables to their destinations and attach as necessary.
4. If necessary, bundle any excess cable.

Completing the connections

Now that the system drawer is installed in the cabinet, make the system connections.

Important

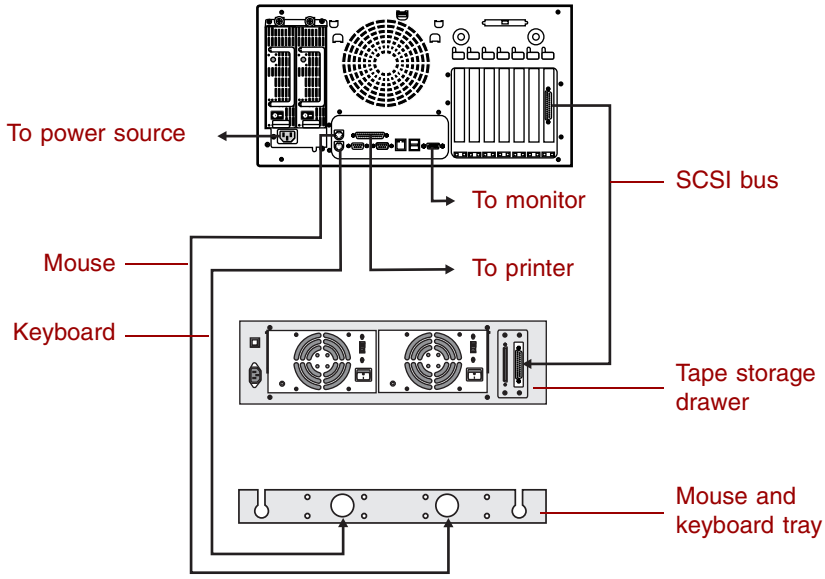
A wide variety of system connections are possible. Your actual system connections may be different from the following examples.

Connecting a single system drawer

To connect the peripherals:

1. Turn off all system drawers and devices in the cabinet before attaching any of the system drawer cables.
2. Connect all I/O device cables (keyboard, mouse, video, serial, and parallel) to their respective ports on the back of the system drawer.

   The system board connectors may appear different than in the illustration, depending on your system board.



Connecting multiple system drawers

Multiple system drawers installed in a cabinet can share a single set of peripherals if a switch box, such as an autoswitcher, is installed.

To connect multiple system drawers:

1. Turn off all system drawers and devices in the cabinet before attaching any of the system drawer cables.

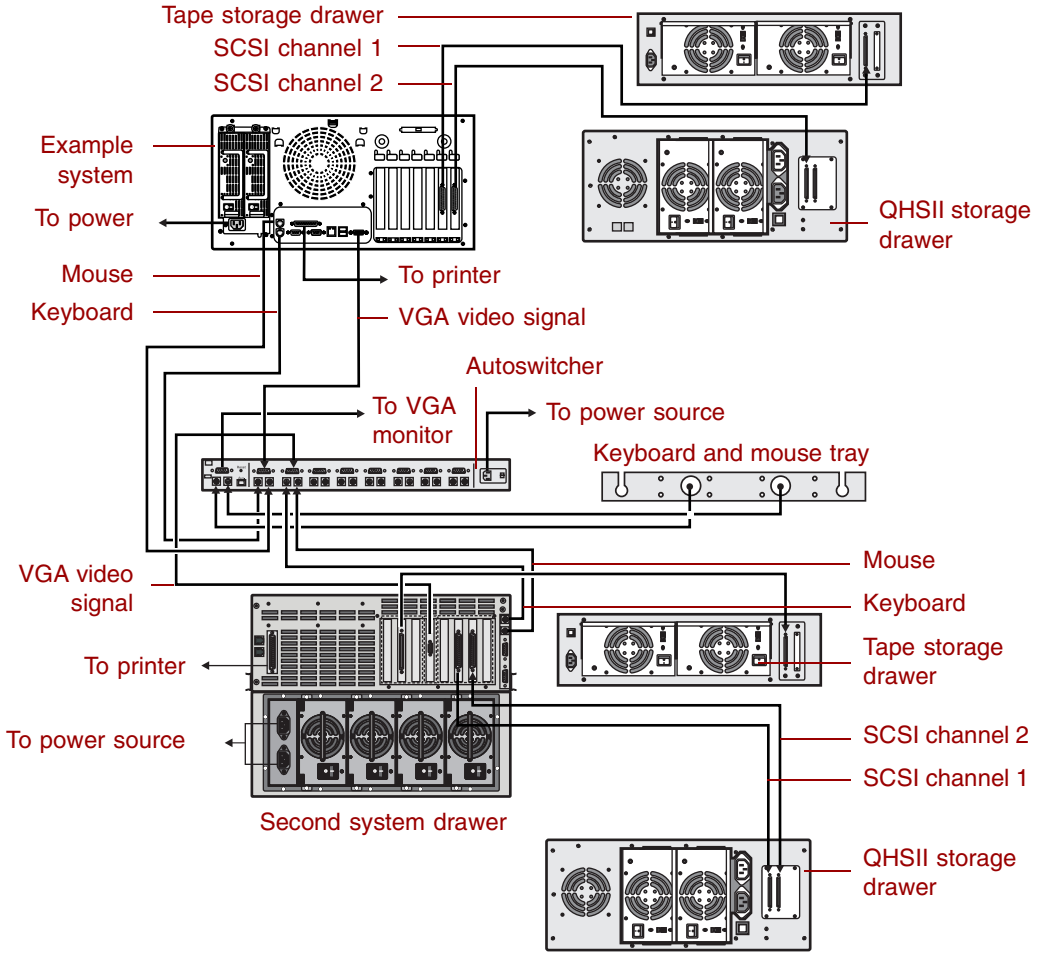
   The autoswitcher gives control of the monitor and routes the keyboard and mouse inputs to the currently selected system drawer. Installation of the autoswitcher is relatively simple and covered in detail in the autoswitcher user manual.

2. If the newly installed system drawer will control other drawers in the cabinet, connect the external data cables of the controller cards to the controlled devices.

3. Connect all I/O device cables (keyboard, mouse, video, serial, and parallel) to their respective ports on the back of the system drawer.

The system I/O connectors may appear different than in the illustration, depending on the system board installed in the server.

If connecting multiple system drawers, you must connect extender cables to the system drawers used. You must also attach the peripherals to the appropriate I/O ports on the back of the autoswitcher. Refer to the following figure for connection details.



Connecting the power

Gateway recommends that a licensed electrician install a dedicated 230 VAC line, with sufficient amperage rating for the system drawer, to a breaker box or distribution panel. The power cords must be wired directly into the breaker box.

If you use 115 VAC, make sure not to overload any power strip or wall outlet. Observe the following guidelines:

- Only one system drawer per power strip (15 or 20 amps) or wall outlet (15 or 20 amps). For critical applications, plug the system drawer power cords into separate circuits.
- If an uninterruptible power supply (UPS) is installed, plug only one system drawer into it.
- Check the ratings on the nameplate to make sure that the supply circuits are not overloaded.

The power cords must be routed through the cabinet floor opening and to the system drawer. Make sure that the electrical demands are balanced and that the system is grounded. Make sure the power supply connections are not overloaded when connecting to power strips.

Depending on the plug-in configuration, the following devices may share the same power strip:

Plug-in Configuration	Power Strip	Total Supported Devices
230 VAC	15 amp	▪ System drawer ▪ QHS storage drawer ▪ Tape storage drawer Total must not exceed 12 amps
	20 amp	▪ System drawer ▪ QHS storage drawer ▪ Tape storage drawer ▪ Monitor ▪ autoswitcher Total must not exceed 12 amps

Plug-in Configuration	Power Strip	Total Supported Devices
115 VAC	15 amp	▪ System drawer only
	20 amp	▪ System drawer with other peripherals not to exceed a total of 16 amps for the whole strip.

If rack mounted units are installed in a closed or multi-rack cabinet, they may require further evaluation by Certification Agencies. The ambient temperature within the cabinet may be greater than room temperature. Make sure the amount of air flow required for safe operation is not compromised. The maximum temperature for this environment must not exceed 122° (50C).

Turning on the system drawer

To turn on the system drawer for the first time:

1. If using a UPS, turn it on first.
2. Turn on the monitor and any additional devices connected to the system drawer. Listen for alarms which may indicate power problems.
3. If multiple system drawers and a switch box are installed, press the switch box button that corresponds to the system drawer being turned on.
4. Press the ON/OFF button on the system drawer.

Important

If multiple system drawers are installed, you must turn on each system drawer and wait for it to start completely before turning on the next system drawer.

5. Listen for alarms which may indicate power problems.
6. Make sure the power indicator is illuminated. The monitor should display the normal Power On Self-Test (POST) information. If the monitor does not display information or the system drawer indicates an error has occurred, refer to the server system manual troubleshooting section.

7 When the system drawer starts successfully, install the operating system, if necessary.

8 Turn on the other system drawers by repeating Steps 3 through 7 for each additional system drawer installed.

After this procedure, the system drawer can be turned on using normal start sequences.

To turn on the system drawer using normal start sequences:

1 Turn on devices and drawers attached to the system drawer first.

2 When the devices and drawers attached to the system drawer are running, turn on the system drawer.

Turning off the system drawer

To turn off the system drawer:

1 Close all programs.

2 If necessary, issue a "flush" command to write the contents of any caches or buffers to disk.

3 If necessary, issue a command to exit or quit the operating system.

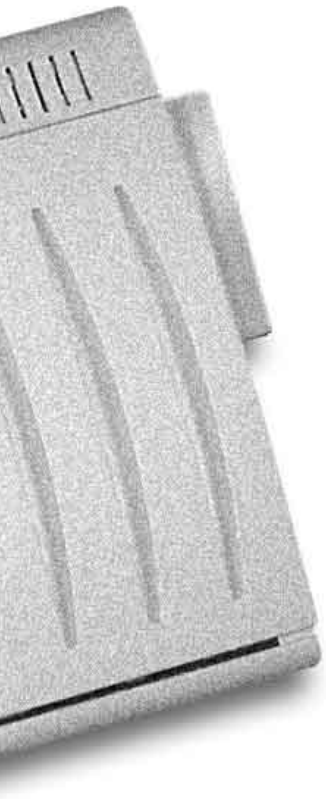
4 Press the ON/OFF switch on the system drawer.

5 Turn off any other devices and drawers connected to the system drawer.

Securing the system drawer in the cabinet

To secure the system drawer:

1. Close the back door of the system cabinet, then lock it if necessary.
2. Push the system drawer all the way back into the cabinet until the front panel presses against the front vertical mounting rails.
3. Secure the system drawer to the front vertical mounting rails using four screws from the accessory kit.
4. Close the front cabinet door, then lock it if necessary.



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